

A NEW NEWSLETTER

Welcome to this Newsletter. It aims to provide a means of communication between all persons and organisations who have an interest in Engineering Heritage, and to cover the full breadth and depth of this subject across all engineering disciplines, including the history of engineers, engineering and technology, the conservation of physical or documentary evidence of this history, the restoration or reconstruction of past works, and the interpretation of these to engineers and to the general public.

Heritage is about what is, or may be inherited - the things, knowledge, techniques, skills and ideas which are valued and kept by one generation and passed on to the next. As new inventions and innovations are developed and ingeniously applied for the benefit of Mankind, previously significant landmarks, traditions, and crafts may be quickly overshadowed, discarded, and not consciously kept for transmission to subsequent generations.

It is clear that all the evidence, both physical and documentary, of past endeavour has not, and probably cannot, be kept, but we owe it to society and to future engineers, to keep adequate evidence of the key developments and major benchmarks. We need to establish principles and techniques for conserving and interpreting our heritage, and to accept and learn from past mistakes and failures. We need to learn as much as possible from engineering history, both from contemporary documents and from the remaining physical evidence. We need to foster ways and means by which the general public can access and comprehend Australia's rich engineering heritage, and to learn how engineers have and are employing 'the art of directing the great sources of power in nature for the use and convenience of mankind', while still maintaining the world's rich and diverse natural and human heritage.

Australians live in an industrial world, yet it is only quite recently that we have begun to take an interest in the remains of our industrial past. It is just over two hundred years since the Industrial Revolution dramatically changed the way in which things were made, and the way in which goods and people were moved from place to place. During this period, engineering emerged as a separate profession, and after separating from architects who specialised in buildings, its practitioners specialised into mechanical engineers in the 1850s, electrical engineers in the 1860s and 70s, and subsequently into chemical, aeronautical, geotechnical, electronic and many other recent disciplines.

Just over two hundred years ago, Great Britain, the first industrial nation, colonised Australia, and this great South Land of 'New Holland' developed uniquely, with fresh technologies, fresh ideals, boundless energy and new horizons. A willingness to "give it a go", the ability or necessity to make do, the initiative "to tie it up with wire" just to keep the show on the road, and the ingenuity to improvise and innovate, has created many noteworthy Australian engineering achievements.

This newsletter aims to describe current developments and activities which help us to understand and conserve our engineering heritage better. By contributing short articles and news, you can help to make this newsletter a success.

Finally, my grateful thanks must go to Ken McInnes who formulated the idea of this newsletter and prepared much of the material in this edition, and to Denis Cumming who assisted in the final editing.

Tony Moulds, Hon. Editor

FORTHCOMING EVENTS:

Summer School
The Conservation of Traditional
Buildings

Dates: 11- 12 January 1993
Place: University of Canberra
Bruce, ACT

First Australasian Engineering
Heritage Conference (incorporating the
7th National Conference on
Engineering Heritage) 1994:
(Joint with IPENZ)

Theme: Old Ways in a New Land

Dates: 28-30 November 1994
Place: Christchurch, New Zealand

8th National Conference on
Engineering Heritage 1996:
(Being planned)

Place: Newcastle NSW
Date: 1996

Inside this Issue:

Editorial	1
Engineering Heritage and Conservation Guidelines	2
National Committee on Engineering Heritage	2
Australian Engineering Plaquing Programme	3
Australian News	4
International News	5
New Books and Articles	6
" Scienceworks "	7

"ENGINEERING HERITAGE AND CONSERVATION GUIDELINES"

ENGINEERING HERITAGE

After consultation with persons and organisations concerned with heritage sites, with artefacts in museums, and with keeping engineering objects still running and working, a sub-committee of the National Committee on Engineering Heritage has prepared "guidelines for the practice of engineering in the conservation of engineering works and objects in accord with responsibility to the community", intended in part to complement the "Environmental Principles" released by the IEAust. earlier this year.

Published with the assistance of funding under the National Estate Grants Programme, and with permission from ICOMOS Australia to include the text of the Burra Charter, the guidelines were launched by Ms Sonja Lyneham, Chairperson of the Australian Heritage Commission, at the Sixth National Conference on Engineering Heritage held in Hobart in October 1992.

The guidelines have drawn extensively on the principles of the Burra Charter, particularly as developed by J.S. Kerr in "The Conservation Plan" [National Trust of NSW, 1990], and extend the use of the terms 'place' and 'object', by using the word item, which may be either place or object. Their width of application is emphasised by illustrations of a railway locomotive under steam, a captured German tank currently held in an Australian museum, the Boulton and Watt beam-engine in the Powerhouse Museum in Sydney, the hulk of the 'Cerebus' beached at Sandringham, and the static items of two bridges, a dam, the Burwood Colliery head frame, and the Coolgardie Goldfields Pipeline.

Copies of the guidelines have been delivered to all members of the Institution, in 'Engineers Australia' 16 October 1992, and are available in Division Offices. They are being sent to national and state heritage authorities, to National Trusts in each state, and to other conservation bodies.

(Further copies are available from Rob Breen, Executive Officer of the National Committee on Engineering Heritage, Engineering House, 11 National Circuit, BARTON, 2600 ACT AUST - or Division offices at a cost of \$10.00)

NATIONAL COMMITTEE ON ENGINEERING HERITAGE

Activities:

The National Committee meets usually twice each year and provides a forum for the interchange of ideas and information between its members. Activities vary in accordance with the needs of the time, and currently include the following:

- o Australian Engineering Plaquing Programme.
- o Biennial Engineering Heritage Conferences.
- o Engineering Heritage and Conservation Guidelines.
- o Encouraging the identification and recording of engineering heritage items within Divisions, and their conservation and interpretation when appropriate.
- o Encouraging the presentation and publication of papers on engineering heritage.
- o Arranging lecture tours by eminent speakers.
- o Establishing Institution policy on heritage matters.
- o Liaison with national and international heritage bodies.

Committee Members:

Chairman: Deane Kemp South Australia
Deputy Chairman: Tony Moulds Western Australia

Committee:

Keith Drewitt	Tasmania
Paul Hagenbach	Sydney
Bill Jordan	Newcastle
Deane Kemp	South Australia
Byrne Kenny	Canberra
Ken McInnes	Victoria
Bill Oliver	Queensland

Don Fraser	Supernumary
Harry Trueman	Supernumary

Corresponding Members:

Denis Cumming	Western Australia
Bryan Homann	South Australia
John Pollard	New Zealand
Charles Smith	Tasmania
Jim Whitehead	AusIMM (Vic)
Ray Whitmore	Queensland

Executive Officer:
Rob Breen

IEAust. National Office

AUSTRALIAN ENGINEERING PLAQUING PROGRAMME

INTRODUCTION

The National Committee on Engineering Heritage is responsible to the Board of Engineering for the Institution's Australian Engineering Plaquing Programme.

The Committee has established a Commemorative Plaque Sub-Committee to manage the programme which has the following elements:

- o the identification of historically significant engineering works and sites within Australia;
- o the agreement by interested parties that the work or site should receive appropriate recognition;
- o the marking with a plaque;
- o the publicising of this award to increase public understanding of the contribution made by engineering to the development of Australia and its people.

HISTORIC ENGINEERING MARKER (HEM)

There are many structures, sites, artefacts and other engineering works which would benefit from an informative plaque indicating their historical significance. The HEM is designed to do this.

Cast in bronze, 400mm by 300mm, it carries the seal of the Institution, the name of the work, a text of about 70 words describing the work, and the year of dedication.

The text states in plain English:

What it is
Who designed, made or built it
Its engineering significance
Its social impact

Historic Engineering Markers have been placed as follows:

Sugar Cane Harvesters	1984 Bundaberg Qld
Furphy Water Cart	1985 Shepparton Vic
McKay Smithy	1986 Melbourne Vic
Winding Engine No.756	1986 Gympie Qld
Bull & Ridley Grain Harvesting Machines	1986 Roseworthy SA
Smith's Stump-Jump Plough	1987 Ardrossan SA
Story Bridge	1988 Brisbane Qld
Howard's Rotary Hoe	1988 Glenfield NSW
Princess Royal Battery and Magazine	1988 Albany WA
Street Lighting Plant	1988 Tamworth NSW

Angle Vale Bridge	1988 Angle Vale SA
Inaugural Meeting Place of IEAust.	1989 Sydney NSW
Darlington Point Bridge	1989 Darlington Point NSW
Richmond Bridge	1991 Richmond TAS
Cowra Bridge Truss	1990 Cowra NSW
Goolwa Port Elliott Railway	1992, Goolwa Port Elliott Victor Harbor
Lithgow Blast Furnace site	1992 Lithgow NSW
King's Bridge	1992 Launceston TAS

NATIONAL ENGINEERING LANDMARK (NEL)

Some works of particularly outstanding engineering importance, warrant special recognition above that associated with an Historic Engineering Marker. For these very special works, the Institution reserves its ultimate accolade - the National Engineering Landmark. NELs are few in number, and are awarded only after careful research and scrutiny.

The NEL plaque is a 300mm diameter bronze casting bearing the Institution's Seal and the title "National Engineering Landmark".

Explanatory material if required, may be set out on a separate information plaque similar to a HEM but without the HEM title. The plaque may include names of co-sponsors along with that of the Institution of Engineers.

National Engineering Landmarks have been placed as follows:

Lennox's Landsdowne Bridge	1986 Carramar NSW
Coolgardie Goldfields Water Supply Scheme	1987 Mundaring WA Kalgoorlie WA Cunderdin WA
Sydney Harbour Bridge	1988 Sydney NSW
Busby's Bore	1988 Sydney NSW
Newcastle Harbour	1989 Newcastle NSW
Snowy Mountains Hydro-electric Scheme	1990 Talbingo NSW
Fremantle Harbour	1990 Fremantle WA
Zig Zag Railway	1992 Lithgow NSW

(For a pamphlet describing the Australian Heritage Plaquing Programme, or for guidelines for nominating an engineering work for plaquing, contact Rob Breen, National Committee Executive Officer.)

AUSTRALIAN NEWS

A BIBLIOGRAPHY OF AUSTRALIAN ENGINEERING HISTORY AND HERITAGE, PREPARED FROM THE DATABASE "ENGINE"

Compiled by Denis Cumming, Tony Moulds and Lloyd Wrigley for the National Committee on Engineering Heritage, this contains over 230 indexed abstracts of published papers describing the history of engineering in Australia, and also elements of the methodology of conservation and interpretation. It is available either as a printed 74 page document (ISBN 85825 545 6 published October 1991), or as a text file on a floppy disk suitable for IBM or Macintosh compatible personal computers, with a printed index. (When ordering please specify 5.25 or 3.5 inch disk and computer type) Cost only \$25 each.

Contact: Mea De Angeli, The Institution of Engineers, Australia, Engineering House, 11 National Circuit, Barton ACT 2600. Tel: (06) 270 6555 Fax (06) 2731488.

BIBLIOGRAPHY OF THE HISTORY AND HERITAGE OF ENGINEERING IN AUSTRALIA

Extending a paper presented at the Engineering Heritage Conference in Perth in 1990, Kay Leverett, the Librarian Engineering at the University of Adelaide, and Denis Cumming of the Department of Civil Engineering (but currently in Western Australia) are collaborating in compiling a bibliography of monographs and major contemporary documents which describe the history and heritage of Engineering in Australia.

Kay and Denis will be pleased to hear from others engaged in similar tasks. They would particularly like to hear from others who are researching papers presented to the societies which formed the Institution of Engineers, Australia in 1919, and papers on engineering presented elsewhere, including to learned societies, Royal Societies, and to the Australasian Association for the Advancement of Science (later ANZAAS), and also in Parliamentary Papers.

For further information, contact Kay Leverett
Ph (08) 228-4659; Fax (08) 232-3689;
E-mail leverett~@library.adelaide.edu.au or
Denis Cumming Ph (09) 364-1586.

(See also "A Preliminary Survey of the Literature on Industrial and Mechanical Engineering in Australia" by D.A. Cumming & K. Leverett, in Fifth National Conference on Engineering Heritage 1990. IEA Publication 90/16)

AUSTRALASIAN INSTITUTE OF MINING AND METALLURGY - BIOGRAPHIES

As a project to commemorate its centenary in 1993, this Institute is undertaking the ambitious task of preparing biographies of Presidents, Medallists, Honorary Fellows

and recipients of the President's Award, a total of more than 100 persons.

A three page biography describing the person's activities in the mining industry and in the Institute, copies of Presidential addresses, papers, eulogies, and similar material, and a photograph when available, will be assembled in separate folders for each person.

Probably only seven or eight copies will be produced. These will go to the Latrobe Library in Victoria and the National Library in Canberra, to the state library of the person's origin or major activity, to kindred institutions (including IEAust.) when the person concerned had dual membership, and to surviving descendents of the person concerned.

For further details, contact Jim Whitehead, Mineral Heritage Committee (03) 347-3166.

The Institution of Engineers Australia is considering a similar project for its 80th anniversary in 1999, which will cover the lives and work of Presidents, Medal Holders and Honorary Fellows. Expressions of interest from potential authors will be sought in 1993.

AUSTRALIAN DICTIONARY OF BIOGRAPHY.

The next section of the ADB covering people who died between 1940 and 1980, will be published as volumes 13 to 16 of the series. Volume 13 (A to D) is planned for publication in mid 1993, and Volume 14 (D to K) is currently being compiled. A biographer is still sought for the eminent engineer J.B.O. Hosking 1894-1975, Chief Executive of the Melbourne Harbour Trust.

If you are willing to prepare this biography, please contact Chris Cuneen at ADB - tel: (06) 249 2676 fax: (06) 257 1893

UNIVERSITY OF SYDNEY - ARCHIVES SUMMARY GUIDES

The University of Sydney has published two archival guides which are of engineering heritage interest: Archives Summary Guide III "Engineering - Faculty / Departments Minutes / Correspondence / Other Records"; and Archives Summary Guide IV "Engineering - Personal Archives". Compiled by Margaret R. Dwyer and published in July 1991, ISSN 1036-8671, these useful single page guides to the holdings at the University, will be most valuable to those researching the work of Engineers in New South Wales, and particularly of those associated with the University of Sydney.

For further information contact: Archives A14, University of Sydney, NSW 2006 AUS

(See also "Engineers' Papers: An Undervalued Historical Source" by M.R. Dwyer, in Fifth National Conference on Engineering Heritage 1990. IEA Publication 90/16)

AUSTRALIAN NEWS

HISTORY OF AUSTRALIAN SCIENCE AND TECHNOLOGY

A recent copy of the "History of Australian Science Newsletter", records that two new groups have been formed recently to bring together people with an interest in the history of science and technology: "History of Science, Ideas and Technology Group" in South Australia, and "The Dyason Society, for the history of science and technology in Australia" in Victoria. In New South Wales, the established Colonial Science Club holds regular talks which include topics on technology and engineering.

EARLY EUROPEAN ARTEFACT FOUND

The oldest known European artefact to be found in Australia, is a recently discovered simple lead fishing weight. Apparently made in France or Spain between 1235 and 1400 AD, the weight was found buried in sediment from Fraser Island, off the coast of Queensland. Geologist Bill Ward of Griffith University in Brisbane, and colleagues from CSIRO were collecting samples in order to date the formation of the island's sand ridges. The weight could have been brought to Australia by Portuguese sailors up to 400 years before Captain Cook landed in Botany Bay in 1788. (Reported in New Scientist 15 Feb 1991)

CONSERVING AND RECORDING OUR ENGINEERING HERITAGE

The Institution's Sixth National Conference on Engineering Heritage was held 5-7 October 1992 in Hobart.

Some twenty two papers covering topics including maritime history, building conservation, heritage databases, oral history, historic New Zealand bridges and the achievements of outstanding engineers, were presented. Copies of the conference papers are available from the IEAust Tasmania Division office, telephone (002) 34 2399

Over 50 persons registered for the conference with 27 enjoying the two day pre-conference tour from Launceston.

Professor Angus Buchanan, Director, Centre for History of Technology at the University of Bath UK, provided two keynote addresses and contributed to most conference sessions. Professor Buchanan's visit to Australia was made possible with support from the Hydro Electric Commission of Tasmania. He is an internationally recognised authority on the history of engineering and technology and has written widely on the subject. He visited most divisions before and after the conference. The IEAust is very appreciative of the support from the HEC Tasmania and Professor Buchanan's contribution.

OVERSEAS NEWS

IEEE CENTRE FOR THE HISTORY OF ELECTRICAL ENGINEERING

In August 1990, the Institute of Electrical and Electronic Engineers signed a contract with Rutgers-The State University of New Jersey, to undertake co-ordinated programs in the history of electrical engineering, and in September 1990, the IEEE Centre for the History of Electrical Engineering moved from New York to the Rutgers campus in New Brunswick. In January 1991, all staff, reference collections, research and administration were re-located, and the mailing address is now: Center for the History of Electrical Engineering, Rutgers-The State University, 39 Union Street, New Brunswick, NJ 08903-5062 USA. Tel: (908) 932-1060.

THE LEANING TOWER OF PISA

Following the collapse of a tower in Pavia in 1989, the Italian government has closed the famous leaning tower of Pisa, and appointed a commission headed by staff of the Turin Polytechnic, to decide whether the tower is safe. It appears that the tower is leaning because of a layer of very soft clay between 8 and 40 metres below the surface. Construction of the tower, which began in 1173, was stopped when the builders were half way up, because war emptied the treasury, and the building probably settled during the next hundred years as the underlying soil consolidated. Modern analysis

indicates that if construction had not stopped at this stage, the tower would probably have collapsed.

The rest of the tower, except the bell chamber, was built between 1270 and 1277. Again if work had not stopped at this point, calculations show that the tower would probably have toppled through subsidence, for as the weight increased so did the the uneven distribution of foundation pressures.

When adding the bell chamber later, the builders tried to straighten the already leaning tower by slanting it, and placed four steps on the south side and only three on the north side.

Currently, it is proposed to reinforce the tower with a corset of steel cables around the structure below the first gallery. Then the whole site will probably be isolated from the ground water, so as to stabilise the water content of the soil in the foundations.

(Reported in New Scientist 4 May 1991)

LARGE DAMS IN THE NEWS

Large dams are among the most awe-inspiring monuments of modern society. Arguably they were pioneered by the New Deal programme of public works in the United States under which the Hoover Dam was built on the Colorado River in the 1930s, and by the great works during the same

OVERSEAS NEWS (continued)

period on the rivers of Russia. Dams are often seen as the springboard for economic growth in a developing world, for they offer unending supplies of cheap hydro-electricity for industry and a secure source of water to irrigate fields and feed a growing population. Since 1950, large dams have been placed across some of the greatest rivers on Earth. In the last 40 years, the amount of water impounded behind such dams has increased 25 fold. However in recent times these dams particularly in tropical areas, have been criticised because of the high siltation rates, loss of land submerged under large areas, consequent changes to the environment, and the high capital costs which have to be paid off over many life-times, if at all.

It would appear that the history of development of large dams is ending and can now be written, except for the last few chapters which relate to the strengthening and reconstruction of the dam walls, and enlargement and reconstruction of the spillways.

Many old reservoirs, particularly those with small seasonal fluctuations in water level, now have vegetation patterns around their shorelines which have come to be considered almost natural. The catchments of many dams, especially those with closed or protected catchments, have become important conservation areas, and many have been given heritage protection. These older dams are also part of our engineering history, and should be recognised and protected

as part of our man made heritage, along with their associated collecting and delivery works.

In Australia, an increasing number of dams and reservoirs are being listed for protection as part of our heritage. However, proper thematic and geographic studies of our dams are still needed to identify correctly those which are of national, state and regional significance from a technical and historical view point. Similar thematic studies at an international level are needed.

INTERNATIONAL STATIONARY STEAM ENGINE SOCIETY (ISSES)

The Stationary Engine Research Group (SERG) of the UK and the Stationary Engine Society of the USA have recently merged to form the International Stationary Steam Engine Society (ISSES). The principal aims of ISSES are to foster, encourage and co-ordinate an interest and appreciation of the history, recording and preservation of stationary engines throughout the world. Publications include the quarterly ISSES Bulletin (ISSN 092 5839) and an annual journal "Stationary Power". Recent articles of local interest have included 'A Short Technical History of Spotswood Pumping Station' by M.S. Churchward, Museum of Victoria (Bulletin 1991-1) and "The Power House Museum Sydney, Australia" by John Cooper (Bulletin 1991-2).

NEW BOOKS AND ARTICLES

GUIDE TO THE ARCHIVES OF SCIENCE IN AUSTRALIA

(Volume 1):

A joint project of the Department of History & Philosophy of Science at Melbourne University and of the National Centre for Australian Studies at Monash University, this unique guide summarises the evidence of Australia's scientific past, and provides convenient access to the material held by archives and libraries throughout Australia. It covers the archival holdings and papers of about 1500 scientists. Entries are listed alphabetically by surname, and contain biographical detail for each scientist, and also a detailed description of the records and of the repositories in which they may be found. October 1991 ISBN 0 909532 97 4 Hardback 320pp \$70 Available from: D.W. Thorpe Pty Ltd, 118 Salmon Street, Port Melbourne, VIC 3207 AUS

(See also "History of Australian Science Newsletter" ISSN 0811-4757 published by the Department of History and Philosophy of Science, University of Melbourne.)

Note also: "The Register of the Archives of Science in Australia", the Australian Science Archives Project (ASAP)

national database became on-line through OZLINE network in Jan 1992.

PACKAGING THE PAST - PUBLIC HISTORIES

This collection of essays edited by John Rickard, Reader in History at Monash University, and Peter Spearritt, Director of the National Centre for Australian Studies at Monash University, has been published by Melbourne University Press as a special issue of Australian Historical Studies. It includes some 20 contributions from Australian historians dealing with public history, heritage, museums and material culture. Size: 240 x 170 mm, 272 pages. Illustrated in black and white. Price \$25.00 ISBN 0 522 84458 8. Available from Publications, National Centre for Australian Studies, Monash University, Clayton, VIC 3168 AUS.

THE ENGINEER IN AMERICA

Because of an historical link to the military tradition, engineering had its roots in violence, or so this book implies. It contains a fascinating collection of essays on subjects ranging from turnpikes to chemicals. (University of Chicago, 437 pages, \$US35).

NEW BOOKS AND ARTICLES (continued)

CIVIL ENGINEERING 1839-1889: A Photographic History

Written by Mike Chrimes, librarian at the Institution of Civil Engineers in London, this book captures the excitement of the period when Civil Engineers worked in a golden age, and Isambard Kingdom Brunel, George and Robert Stephenson and many others, developed their skills in railway, dam and bridge construction in Britain and Europe.

This book of 181 pages and 104 photographs of construction work of the period, many previously unpublished, includes a photograph of the construction of the Manly Ferry Terminal in Sydney. (Thomas Telford, 181 pages, UK 18 Pounds).

THE GENIUS OF CHINA

This book by Robert Temple brings together in an accessible form, references to the sophisticated scientific and technological culture of early China, whose engineering works were not equalled by Europeans until comparatively late in the industrial revolution. Many of its products and technologies including paper, porcelain, iron casting, and factory production, reached Europe along the Silk Road during the Middle Ages. However while Europe entered the Renaissance and the subsequent technological revolution, China began a long decline which continued effectively until the middle of this century. The extensive and detailed life's work by Needham "Science and Civilisation in China" is thus made accessible to the general reader.

(Prion, 254 pages, UK 12.55 Pounds)

ANCIENT LESSONS FROM ARID LANDS:

(Article in New Scientist 7 Dec 1991)

In many arid lands, ancient civilisations built large engineering works to harvest meagre rainfalls and to channel the runoff to improve crops and grazing. Upon these people survived and thrived in places which are nowadays regarded as uninhabitable. As growth in water demand outstrips supply, we can re-learn old techniques by studying the relics of our ancestors, and perhaps re-apply their technology to return life to these dry regions of the world. This wide ranging article outlines many of the recent discoveries of abandoned practices, most of which appear not to have failed, but to have been abandoned because of invasions and the resulting imposition of different techniques and values. This interesting article in the recent series "Making Water Work" shows how little we know about ancient engineering practices.

SMEATON BICENTENNIAL

The ASCE Committee on the History and Heritage of American Civil Engineering (CHHACE) in conjunction with Lawrence Technological University organised a Civil Engineering Landmarks Tour to Great Britain in 1992, to commemorate the 200th Anniversary of the death of John Smeaton. In addition to holding a ceremony to designate the Eddystone Lighthouse as an International Historic Civil Engineering Landmark, and visiting the recently restored Smeaton dry-dock, the tour visited Telford's Pontcysyllte Aqueduct, the Menai Bridge, and Ironbridge. (ASCE Journal)

"SCIENCEWORKS" - MUSEUM OF VICTORIA AT SPOTSWOOD

The Museum of Victoria is proud to announce the arrival of Scienceworks.

Scienceworks is a brand new kind of Science and Technology Centre, located on the Yarra at Spotswood. At Scienceworks, everyone can explore the world of science and technology through a wide range of experiences.

The Site

Scienceworks has a modern exhibition building and a grassed arena for outdoor events, as well as the historic Spotswood Pumping Station where the giant steam engines enthral the visitor. Facilities on the site include a science shop where a wide range of publications and merchandise are offered, a restaurant, an auditorium, special activities areas, and an outdoor amphitheatre.

Exhibitions

The Museum is currently building long-term exhibitions on the themes of travel, invention, energy and materials. These exhibit the principles of technology in a social and historical context.

'Travel' is an encounter with experiences of travel and its technologies from the 1830s into the future. 'Invention' describes the people, the principles, and the processes of invention and inventiveness. 'Energy' looks at our reliance on fossil fuels, their environmental impact, and some of the solutions which are being proposed to overcome perceived problems. The fourth exhibition explores the wide range of materials and metals which we use in everyday life.

SUBSCRIPTION DETAILS

ENGINEERING HERITAGE AUSTRALIA

Published twice per year, and distributed free to members of IEAust. who have an interest in Engineering Heritage and to other interested persons and organisations.

The Editors are keen to receive news items and short articles for this newsletter, preferably on floppy disks. Most word processing formats can be handled.